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***IN THE UNITED STATES PATENT AND TRADEMARK OFFICE***

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In re application of: PATWARDHAM et al.

Attorney Docket No.:

NSC1P131X3/P0431P03

Patent: 7,423,337

Issued: September 9, 2008

Title: INTEGRATED CIRCUIT DEVICE  
PACKAGE HAVING A SUPPORT COATING  
FOR IMPROVED RELIABILITY DURING  
TEMPERATURE CYCLING

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**CERTIFICATE OF EFS-WEB TRANSMISSION**

I hereby certify that this correspondence is being transmitted electronically through EFS-WEB to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 on **October 9, 2008**.

Signed: \_\_\_\_\_  
/Lydie Fitzsimmons/  
Lydie Fitzsimmons

**REQUEST FOR CERTIFICATE OF CORRECTION  
OF OFFICE MISTAKE  
(35 U.S.C. §254, 37 CFR §1.322)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Attn: Certificate of Correction

Dear Sir:

Attached is Form PTO-1050 (Certificate of Correction) which is suitable for printing. The errors together with the exact page and line number where the errors are shown correctly in the application file are as follows:

**(75) Inventors:** Change "Nikhil K. Kelhar" to --Nikhil V. Kelhar--.

This appears correctly in the Declaration as filed in the above-identified patent application, as well as in the official filing receipt received from the Patent Office.

**SPECIFICATION:**

**Column 6, after line 39, insert** --Referring to FIG. 5C, the semiconductor die of FIG. 5B is shown as being permanently attached to a substrate, such as PCB 120, in accordance with

one embodiment of the present invention. As illustrated, a single die 100 has been aligned with contacts on a PCB 120 and permanently attached through the reflowing of the solder bumps of the die and the solder paste of the PCB to form multiple solder joint connections 130. Because of the presence of the sufficiently rigid support coating 160, however, the shape of each solder joint 130 is substantially constrained in comparison with a typical solder joint 30, as seen in FIGS. 2C and 3. As indicated above, the support coating 160 has provided structural support to the solder bumps 112 during the reflow process, such that the extent of the collapse of the solder joints has been constrained. In addition, the support coating 160 is also able to provide structural support to the subsequent solder joint connections 130.--.

This appears correctly in the patent application specification as filed on page 10, paragraph [0036].

**Col. 6, line 46, delete “tie”.**

This appears correctly in the patent application specification as filed on page 10, paragraph [0037], line 6.

**Col. 6, beginning at line 62 and ending with Col. 7, line 14, delete “Continuing on to FIG. 6, a particular solder joint between the PCB and semiconductor die with a sufficiently rigid support coating of FIG. 5C is similarly illustrated in side cross-sectional view. Compared to the conventional solder joint 30 of FIG. 3, the solder joint 130 of FIG. 6 is superior in several ways. One significant improvement can be found in the wetting angle 131 between the solder joint 130 and the die 100. If the height of the support coating is at about fifty percent of the original solder bump height, the final wetting angle 131 is typically between 50 and 60 degrees, which is markedly better than the normally resulting angle of about 25 to 35 degrees. In some instances, the final wetting angle 131 is almost equal to the pre-collapse angle between the original solder bump 112 and die 100. In any event, this significant increase in the final wetting angle substantially increases the structural strength of the formed solder joints, which improves solder joint reliability and lifespan under temperature cycling. In fact, preliminary experimental results**

indicate that reliability and lifespan are at least doubled for solder joints in dice having a sufficiently rigid support coating.”

This apparently repeated paragraph does not appear in the patent application specification as filed nor has this been amended with any of the amendments filed.

Patentee hereby requests expedited issuance of the Certificate of Correction because the error lies with the Office and because the error is clearly disclosed in the records of the Office.

It is noted that the above-identified errors were printing errors that apparently occurred during the printing process. Accordingly, it is believed that no fees are due in connection with the filing of this Request for Certificate of Correction. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-4481 (Order No. NSC1P131X3).

Respectfully submitted,  
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